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HISTORICAL BACKGROUND

Till year '05



- **Garage repair shops** → Responsibility of End-of-use tyres (EUT). Cost and Management
- **Waste** → Limited interest, Undeveloped valorisation market.
- **Alternatives** → Retreading, special sales.
- **Dumping sites** (Legal and Illegal ones)

Since '05



- **Gradual closing of dumping sites** (European legislation)
- **Start of Valorisation Market development**
- **Limited Alternatives (Still)** → Environmental global situation worsening
→ Concerns about wasted material common practices
- **Royal Decree 1619/2005 (EUT)**, involvement of tyre manufacturers, wholesalers, retailers and national / regional administrations.



SIGNUS: "Non-profit organization aimed to address the challenge of guaranteeing the right management of EUT, while achieving the maximum environmental and legal respect".



COMMITMENTS

✓ Respect to legislation:

- ☐ **Hierarchy principle:** in regard to EUT management, firstly promoting the EUT **reutilization**, before el recycling or energetic valorisation.
- ☐ **Universality principle:** free picking-up service guaranteed to every EUT generator across all Spain.
- ☐ Achievement of **environmental objectives**, established in the Integrated National Plan of Wasted Materials.
- ☐ **Regular reporting to regional governments**, as agreed in the Royal Decree.

✓ Progressive cost optimization:

- ☐ By the achievement of **scale economies** in the **reverse logistic network**.
- ☐ By developing **new uses, technologies and valorisation markets**.

✓ Rigorousness and Transparency, resources management.

✓ **Communication activities** aimed to every actor involved in the recycling wheel: producers, generators, transformation plants, end users and administrations.



USED-TYRES RECYCLING NETWORK IN SPAIN:

A GLOBAL APPROACH

INDUSTRIALES

ETSII | UPM

PARTICIPANTS

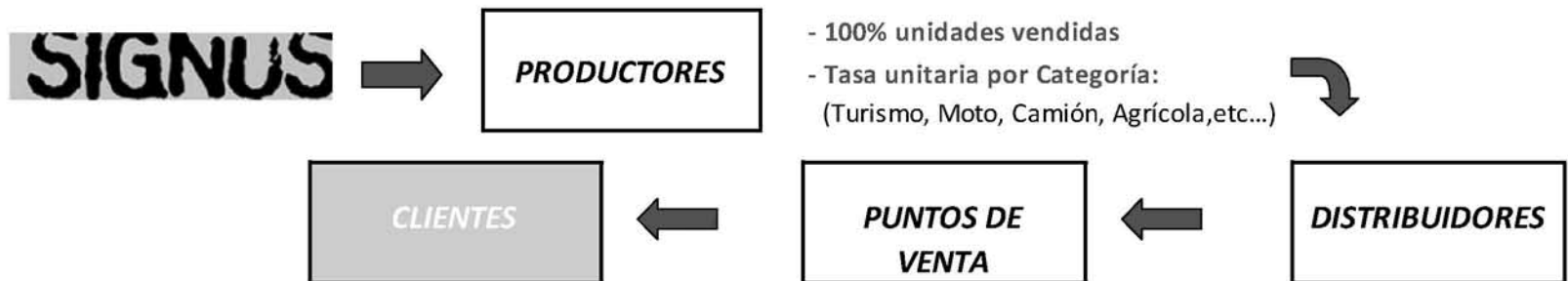
a) Producers

- ✓ Tyre manufacturers in Spain, that put tyres in the market place for the first time.
- ✓ Tyre importers of used or new tyres that put tyres in the market place for the first time.

Obligations:

- ✓ Responsible of the **adequate environmental management** of all kind of substituted tyres (used or retreaded) for every kind of vehicle.
 - ❖ Material Valorisation (Recycling)
 - ❖ Energetic Valorisation

Monetary (Financial flow):





b) Distributors

- ✓ **Mediator** in the sale process.
- ✓ Several levels between **producers** and **end users**.
- ✓ 2 possible ways of tyre acquisition.:
 - ❖ National producers
 - ❖ Imported tyres → **New Producers**

c) Generators (Waste)

- ✓ Every kind of tyre shop, repair garage, autocenters, etc... where new tyres are fitted in substitution of used or retreaded ones.
- ✓ SIGNUS commits with the free picking-up everywhere all around Spain to all partner that require it and observe good practices protocol.

Obligations:

- ❖ Provide all used tyres to SIGNUS specialized collectors
- ❖ Request to the distributor the cost identification of SIGNUS process.
- ❖ Translate SIGNUS cost to end users.



d) Agents

- ✓ Organizations that deal with **End of Used Tyres**, authorised and registered by regional administrations where they operate.
- ✓ **Operational network** , public tenders according the type of operation to carry on and EUT volumes.
- ✓ Several levels between **producers** and **end users**.

Types:

- ❖ **Classification and picking-up centres:** Private specialized companies.
 - o Make the best use possible, selecting every tyre that can be re-used.
 - o → resend to other type of agents for valorisation purpose.
- ❖ **Transport agents.**
- ❖ **Crushing and Triturating facilities.**
- ❖ **Final Valorisation.** Last link of the reverse logistic chain. By-products obtention (alternative fuel or secondary material).





e) End Users

- ✓ Request total cost in the invoice of EUT (when replacing old ones).
- ✓ (Table Costs 2010) →

f) Regional Administrations

- ✓ IMS under laws and regulations.

CATEGORÍA	DESCRIPCIÓN	€/ UNIDAD
A	Moto, Scooter y derivados	1,01
B	Turismo	1,57
C	Camioneta	3,27
	4x4 todo terreno	
	Neumático de Manutención pequeño ≤ 12" y macizo ≤ 12" incluidos bandajes	
	Agrícola ≤ 16" o ≤ 21" si ancho ≤ 7,5"	
D	Camión	10,62
	Agrícola > 16" y ≤ 21"	
	Obra Pública ≤ 16,5"	
	Neumático de Manutención ligera > 12 " y ≤ 15"	
E	Agrícola > 21" y ≤ 30" + Estrechos (*)	19,5
	Obra Pública > 16.5" y ≤ 24" (*)	
	Manutención > 15" y ≤ 24" y macizo de 15"	
F	Agrícola > 30" (*)	34,8
	Obra Pública 25" y ancho ≤ 17,5 - 25" (*)	
	Macizo > 15" y ≤ 24"	



SIGNUS IN NUMBERS

'05-'08 →

98 Producers representing, 90% of the replacement national market.

'08 →

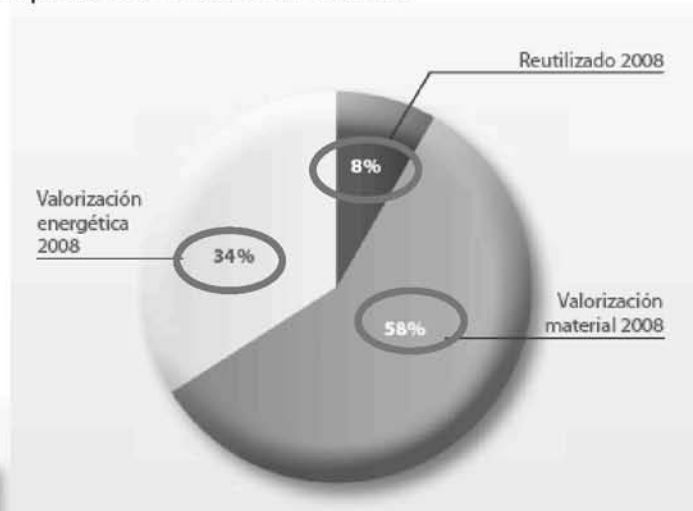
200,000 Tons Managed:

+45% vs. '07

+9% more than put in the market



- 21,384 Points of Generation of EUT
- 113,929 customer attended orders
- 3,462 towns



Taller acreditado SIGNUS

El taller solicita la recogida de los neumáticos usados a un gestor contratado por SIGNUS



El gestor retira de manera gratuita los neumáticos



USED-TYRES RECYCLING NETWORK IN SPAIN:

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33 Picking and
Classification Centres,
national coverage

Centro de Recogida y Clasificación

Se separan aquellos
que pueden
ser reutilizados
como neumáticos
de ocasión o
recauchutados



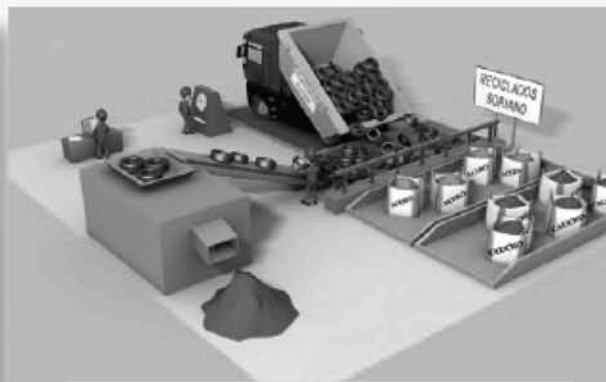
El resto se
transporta a
los centros de
transformación
contratados
por SIGNUS

Proceso de Triturado

Proceso de Granulado



Se trituran los neumáticos fuera de uso para
su posterior reutilización como materia prima
secundaria o combustible de sustitución



Se separan los componentes básicos del
neumático: caucho, acero y fibras para su
posterior utilización como materias primas
secundarias en múltiples aplicaciones

14 Crushing and
Granulating Centres



USED-TYRES RECYCLING NETWORK IN SPAIN:

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Current Applications



Safety children parks floors.



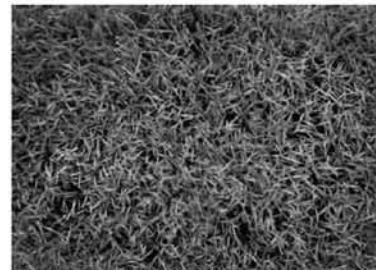
Safety barriers in high-speed circuits



Substitution fuel in industry



Decorative use



Artificial Green

Developing Markets

- ✓ EUT Dust on roads.
- ✓ Landfills.
- ✓ Water storage tanks.
- ✓ Containment walls.



OTHER EUROPEAN IMS

New tyres consumption and Waste generation

- 1 billion new tyres, (2008)
- 3.2 million TM's of wasted materials, (EUT) in Europe (Source ETRMA, 2008)

IMS Management Models:

- ✓ **Producers Responsibility:** (Spain case). Financing translated in a transparent manner to the end user through the direct logistic network..
- ✓ **Governmental Taxes:** Government organize the residuals management, charge taxes to the producers (and these to the end users).
- ✓ **Free Market:** regulated by legislation, free agents acting, organized according that rules..



USED-TYRES RECYCLING NETWORK IN SPAIN:

A GLOBAL APPROACH

Modelo de gestión en Europa

SIGNIUS (España)
VALORPNEU (Portugal)
ALIAPUR (Francia)
RECYTYRE (Bélgica)
BAND & MIEUJ (Holanda)
NORSK DEKKETUR AS (Noruega)
SDAB (Suecia)
SUOMEN RENGASKIERRÄTYS (Finlandia)
EESTI REHVIIT (Estonia)
OPON (CENTRUM UTYLIZACJI) (Polonia)
HUREC (Hungría)
ECO ANVELOPE (Rumanía)
ECO ELASTIKA (Grecia)
LASDER/Lastik Sanayicileri Derneği (Turquía)
E.C.O.PNEUS (Italia)



- Sistema libre de mercado
- Responsabilidad del productor
- Responsabilidad de las empresas productoras
- Responsabilidad del gobierno a través de tasas
- Responsabilidad del productor en desarrollo legislativo